APPARATUS, METHODS, AND COMPUTER PROGRAM PRODUCTS FOR DETERMINING THE COEFFICIENTS OF A FUNCTION WITH DECREASED LATENCY

ABSTRACT OF THE DISCLOSURE

The present invention provides apparatus, methods, and computer program products that can decrease the latency with which the coefficients of a function representative of signal are determined. Specifically, the apparatus, methods, and computer program products of the present invention, taking advantage of the independence of samples, updates each of the coefficients of the function as each sample is received. As such, when the final sample is received, the apparatus, methods, and computer program products of the present invention need only update each coefficient with the contribution of the last sample prior to outputting the coefficients. As such, the latency from the time the last sample is received and the availability of the coefficients is decreased. To further decrease the latency, in one embodiment, the apparatus, methods, and computer program products of the present invention prestore either all or a portion of the possible values of the contribution of a sample to each coefficient, such that. As such, when the sample is received, the apparatus, methods, and computer program products of the present invention evaluate the value of the sample and retrieve the appropriate value from the prestored values that corresponds to the coefficient, sample, and value of the sample, thereby decreasing the time required to determine the coefficients. The apparatus, methods, and computer program products of the present invention also allow individual or subsets of the coefficients to be observed and also allow individual or subsets of the coefficients to be determined in varying resolutions.

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